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Notice of Allowability	Application No.	Applicant(s)	
	10/751,251	JUN, JUNG SIG	
	Examiner	Art Unit	
	Sam K. Ahn	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 05/22/07.
2. ☒ The allowed claim(s) is/are 1-5,7-9,11,12,16 and 17, renumbered in this office action.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Lew Macapagal on 07/24/07.

The application has been amended as follows:

- a. In claim 1, line 1, "digital TV" has been changed to "digital television (TV)", lines 7-8, "the split passband" has been changed to "a split passband of the phase splitter", line 19, "filtered signal" has been changed to "filtered signal of the passband filter", line 22, "a Loop" has been changed to "a loop".
- b. In claim 2, line 1, "The device" has been changed to "The carrier recovery device", line 2, "phase error outputted from the Loop filter" has been changed to "filtered phase error outputted from the loop filter".
- c. In claim 3, line 1, "The device" has been changed to "The carrier recovery device", line 3, "the external" has been changed to "an external".
- d. In claim 4, line 1, "The device" has been changed to "The carrier recovery device", line 2, "when" has been changed to "wherein".
- e. In claim 5, line 1, "The device" has been changed to "The carrier recovery device".

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- f. In claim 7, line 1, "The device" has been changed to "The carrier recovery device", line 3, "the periphery of the" has been changed to "the periphery of the second".
- g. In claim 8, lines 7-8, "signals of the split passband" has been changed to "signals of a split passband of the phase splitter", lines 19-20, "signal and a particular multiple of the" has been changed to "signal of the passband filter and a particular multiple of a", line 21, "a Loop" has been changed to "a loop".
- h. In claim 9, line 1, "The device" has been changed to "The carrier recovery device", lines 2-3, "convert the carrier signal component and components in all data blocks in the periphery of the carrier signal component to have the" has been changed to "convert a carrier signal component to have a".
- i. In claim 11, "The device" has been changed to "The carrier recovery device".
- j. In claim 12, "The device" has been changed to "The carrier recovery device", line 3, "the external" has been changed to "an external".
- k. In claim 16, "The device" has been changed to "The carrier recovery device", line 2, "when" has been changed to "wherein".
- l. In claim 17, "The device" has been changed to "The carrier recovery device".
- m. Claims 1-5,7-9,11,12,16 and 17 have been renumbered as claim 1-12, respectively.

The following is an examiner's statement of reasons for allowance: present application discloses a carrier recovery system receiving a signal wherein the carrier

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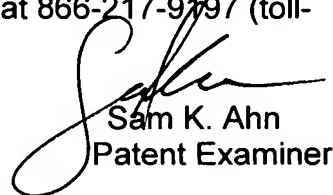
recovery system comprises an analog to digital converter, a phase splitter, first and second multipliers, phase detector and a loop filter. Prior art teaches or suggests in combination of the limitations claimed. However, prior art does not explicitly teach the further limitation of wherein the phase detector comprises first and second squarers or absolute value calculators and receiving I and Q output from the second multiplier, performing subtracting operation on the outputs of the first and second squarers or absolute value calculators, passband filtering the output of the subtracting operation and detecting the phase error by a Gardner phase error detector.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Ahn whose telephone number is (571) 272-3044. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sam K. Ahn
Patent Examiner

8/3/07